

## WE CLAIM:

1. A composite performance enhancing and force absorbing mouthguard having a u-shaped base with upstanding labial and lingual walls forming a channel, comprising:

(a) a non-softenable, flexible framework, comprising:

(i) posterior occlusal plates in the base;

(ii) cross-cantilever connectors extending upwardly and inwardly from the plates; and

(iii) an expansible contractible bridge connected to upward portions of the connectors, the bridge being expansible and contractible to lie along a palate of a user; and

(b) a softenable, customizable wall and channel material encapsulating the framework to custom fit the mouthguard to the mouth of the user without the mouthguard losing its shape during heating.

2. A composite performance enhancing and force absorbing mouthguard of claim 1, further comprising two hard, durable bite wedges located posteriorly than anteriorly.

3. A composite performance enhancing and force absorbing mouthguard of claim 1, further comprising two elastomer traction pads below the plates.

4. A composite performance enhancing and force absorbing mouthguard of claim 3, wherein the traction pads mechanically interlock the plates and the wedges to the pads.

5. A composite performance enhancing and force absorbing mouthguard of claim 3, further comprising elastomeric disconnected anterior impact braces

extending forwardly from the pads in the labial wall to an anterior region with a gap therebetween.

6. A composite performance enhancing and force absorbing mouthguard of claim 1, further comprising framework disconnected anterior impact braces extending forwardly from the plates in the lingual wall to an anterior region with a gap therebetween.

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